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ABSTRACT OF CASES
IN WHICH
PSEUDO-MEMBRANOUS SUBSTANCES
HAVE BEEN DISCHARGED FROM THE BOWELS.

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Abstract of cases in which Pseudo-membranous Substances have been discharged from the Bowels. By WILLIAM THOMSON, M. D., Fellow of the Royal Colleges of Physicians and Surgeons.

AT the conclusion of a recent communication relative to the discharge, by stool, of portions of the entire cylinder of the intestinal tube, (No. 127) I suggested that there are two sources of fallacy to which we are exposed in admitting individual cases to be of this nature. In the *first* place, the substance discharged may,—if we may trust to the statements of authors on this point,—consist merely of the lining membrane of a portion of intestine, detached, by some morbid process, from the rest of its coats; or, in the *second* place, the substance discharged may have formed no part of the texture of the bowel, but be merely an adventitious exudation from its internal surface, similar to that which is formed on the mucous membrane of the larynx and trachea in croup, and which is occasionally expelled from that situation in the efforts of vomiting or of coughing; or to that which is liable to be formed on the surface of the upper part of the alimentary canal, in consequence of aphthous affection, constituting the disease which, as occurring in new-born children, has been termed Muguet by the French. To this pellicular form of exudation on the surface of mucous membranes, it has recently, as is well known, been proposed to apply the general designation of Diphtheritis.

I confess, I am disposed to entertain doubts, whether there be any morbid process, by which we can suppose the mucous membrane of the intestinal tube to be detached from its other coats, in portions of considerable size, and at the same time of sufficient consistence to retain its membranous character. This, however, is a point to which I shall afterwards advert. At present I may remark, that if the detached lining membrane of a portion

of the bowel, or an adventitious layer of coagulable lymph, may be supposed liable, in being discharged by stool, to be mistaken for portions of the entire bowel, it must be still more difficult to distinguish these two kinds of substance from one another; and, accordingly, in perusing the cases that have been put upon record, as examples of one or other of these occurrences, it will be found, that the grounds on which the character of the discharged substances has been determined, are far from having been in all instances satisfactory.

In the present communication, it is my object to bring together a series of cases in which portions of albuminous matter have been discharged from the bowels, with the view of endeavouring to elucidate the particular circumstances under which an exudation of this kind is liable to be produced on the mucous membrane of the alimentary canal. The substance discharged by stool may exhibit considerable diversity of appearances. Not only may it occur in the form of layers more or less tubular, so as to lead to the notion of its being the inner coat of the bowels that has become detached and been evacuated, but sometimes it exhibits appearances that have led to its being mistaken for portions of dead tape-worm, and sometimes it assumes more or less of a globular form, so as to suggest a comparison of it to a clue of cotton wick.

It will, I think, be found convenient to arrange the cases in which a discharge of this nature has occurred, under three heads. Under the *first*, will be comprehended those cases in which one or more portions of albuminous matter have been passed by stool upon a single occasion, without there having appeared to be any recurrence of this discharge. Under the *second*, will be included those cases in which a discharge of this kind has continued a few weeks, and then finally ceased; and under the *third*, those in which the discharge has recurred from time to time during a long series of years. It has been the occurrence in my Father's practice, of a considerable number of cases of this last description, that has particularly called my attention to this form of alvine evacuation.*

It is obviously in cases of the first class chiefly, those namely in which the discharge occurs only on one single occasion, that doubts may arise as to whether the substance be a portion of the bowel itself, or a secretion from its lining membrane.

* In collecting the materials of the following communication, I have enjoyed an advantage similar to that which I had occasion to mention in my paper on the discharge of portions of bowel; that, namely, of having had the ground previously gone over in an inaugural dissertation published at Tübingen under the presidency of my friend Dr H. Authenrieth. Vide, Inaug. Dis. Med. de Pseudangomorphosi in Tubo Intestinali quædam, &c. submitit Mattheus Uhl. Tübingæ, Septembris 1831.

It does not appear, that the formation of an albuminous exudation on the mucous membrane of the alimentary canal, necessarily indicates a very high degree of inflammatory action ; nor is there anything in its particular seat which renders it, as in the case of croup, a source of considerable danger to the patient. Hence it is, that comparatively few *post mortem* examinations have been recorded in cases of this kind. Those which I have been able to find I have placed together under a separate head, without reference to the particular characters which they exhibited.

A very important feature of distinction between the different cases that are to be detailed, will be found to be, that in some the discharge of pseudo-membranous substances was preceded or accompanied by discharges of blood, in greater or less quantity ; in some by discharges of purulent matter, and in some by both bloody and purulent discharges, whilst in other cases, neither pus nor blood have appeared in the evacuations. Are we entitled to infer that in the latter cases the mucous membrane was entire, and that in the former it was abraded or ulcerated ?

SERIES I. CASES in which Pseudo-membranous substances have been discharged from the bowels, on a single occasion.

1. Bianchardus de Triplici Intestinorum polypo, quorum longiorem nonnulli hactenus unicum vermem crediderunt. Lancisii Opera, Tom. ii. p. 33.

2. Dr Percival, Miscellaneous Communications ; Mem. Med. Society of London, ii. 60, (1789.)

3. Valentinus, Observatio admiranda de ejectione membranarum sanguinolentarum per secessum formam viperæ referentium. Venet. 1621. Referred to by Haller in his Bibl. Medic. Pract. ii. 497.

4. Heurnii Vita ad edit. Oper. Omnium prefix. Lugd. Bat. 1658.

5. Fernelius, Pathologiæ Lib. vi. cap. ix. Intestinorum morbi, causæ et signa.

6. J. J. Treyling, Vagina Enteromorpha, per anum excreta. Acta Phys. Med. Nat. Cur. v. 436, obs. 126.

7. Molinelli Comm. Bonon. Scient. Acad. ii. p. 1. Medica, Obs. ii. p. 158.

8. M. Destrées. Journ. Gener. de Medecine, lxxviii. 206.

9. Nic. Tulpius, Interior Intestini tunica, excreta—Observ. Med. Lib. iii. cap. xvii.

10. Morgagni, Epist. xxxi. Art. 19.

11. Apini de Abscessu Tunicæ Intestinalis Glandulosæ ; Ephem. Med. Phys. German. Dec. iii. Ann. ix. et x. Obs. 179, p. 315.

12. Lecheverel, Medecin au Havre, Observation d'une inflammation suivie de l'exfoliation des gros intestins. Journ. Gen. de Medec. Chir. et Pharm. xxix. 44, 1807.

SERIES II. Cases in which a pellicular discharge continued for several days or weeks, and then ceased.

13. J. M. Verdries de Pelliculis intestinali tunicae similibus, Cent. i. obs. 19.

14. Godefr. Thomasius de interioris Intestinorum tunicae ejectionibus, Ephem. Med. Phys. German. Dec. iii. An. iii. Obs. 190, p. 319.

15. D. C. Berthold Behrens de Membranis per annum excedentibus. Ibid. Dec. iii. Ann. v. et vi. Obs. 34, p. 77.

16. Joh. Maur. Hoffmannus de Diarrhœa cum excretionem pellicularum plurimarum. Ibid. Dec. iii. Ann. ix. and x. Obs. 60, p. 124.

17 and 18. Kampf, Neue Methode die Krankheiten des Unterleibs zu heilen, Leipzig, 1786.

19 to 22. Dr Powell. On certain painful affections of the intestinal canal. Trans. Coll. Phys. Lond. vi.

23. Kampf, uti supra cit.

24. J. Gottl. Bauer, Epistola de Molis Intestinorum, Dresdæ, 1747. (V. Halleri. Disp. Med. Pract. iii. 463.)

25. Dr Mason Good, Study of Medicine, 1822. Diarrhœa Tubularis, i. 239.

26. Uhl, de Pseudangomorphosi, p. 16.

SERIES III. Cases in which the pellicular discharge has recurred from time to time, during a long series of years.

27. Dn. Lic. Rosinus Lentilius ; Appendix ad An. iii. Dec. iii. Ephem. Med. Phys. German. p. 88.

28. Dr Thomas Simson, Histories of the Separation of the Villous Coat of the Intestines in Diseases. Edin. Med. Ess. and Observ. v. pt. ii. p. 656.

29. Dr Monro. The Morbid Anatomy of the Human Gullet, &c. Edin. 1811, p. 120.

30. Hufeland's Journal, viii. ii.

SERIES IV. Cases of pseudo-membranous discharge in which an examination of the body has taken place subsequently to death.

31. Dr Abercrombie on the Diseases of the Stomach, &c. Edinburgh, 1828.

32 and 33. Gendrin, Histoire Anatomique des Inflammations, Paris, 1826, i. 631.

34. Tartra, *Traité de l'Empoisonnement par l'Aeide Nitrique*. Paris, 1802.

35. Observation par M. Lefauchaux, &c. sur un sac membraneux faisant partie de l'estomac, rendu par le vomissement. *Journal General de Médecine*, &c. xxiii. 349. (1805.)

SERIES I.—CASE I. A woman recently married, of slender form, and, from poverty, irregular in her mode of life, was seized with fever, and the whole of the fauces became covered with a white and tenacious crust. The fever was accompanied with pain in the side, descending to the region of the stomach, with difficult breathing, troublesome cough, and ultimately bloody sputum. She was treated on the supposition of her disease being pleurisy, but passed into such a state as to hold out little prospect of her recovery. While she was in this condition, however, the sour character of her breath led to a suspicion of the existence of worms, and vermifuge remedies having been administered, she passed by stool a white body, very long, compressed, and marked by what appeared to be numerous joints, along with some round lumbrici. After this evacuation, the pain, cough, and fever immediately subsided. Bianchardi himself was disposed to regard the substance discharged as a single, very long worm, but Lancisi and Morgagni on being consulted, expressed their conviction that it was not a worm, as not possessing any vital organs, but that it consisted of conerete juice formed in the intestines, in the same way, says Lancisi, as polypi are sometimes formed in the heart and arteries.

CASE 2. Lady A. G. aged two years, had an aphthous fever, during which a few ascarides appeared in her stools. On this account, when sufficiently recovered, she took a dose of rhubarb and calomel, which occasioned the discharge of six or eight annular substances, resembling in figure portions of guts, but evidently unorganized. "I found them," says Dr Percival, "to be nothing more than gluten, secreted probably by some parts of the alimentary canal, affected, by the fever, with aphthous inflammation."

CASE 3. The only information given by Haller respecting this case, is, that the discharge occurred subsequently to Emyema, and that the membranes evacuated were ten hand-breadths in length. The patient recovered. The author conjectured that the membranes consisted of blood effused from the vena portæ.

CASE 4. The celebrated critic and scholar Lipsius, had long suffered under a very tedious complaint, in the course of which he experienced various febrile attacks, and his abdomen and whole body became flaccid and emaciated. One day being at

stool, after having taken medicine, he felt that he was discharging a large quantity of continuous and coherent matter. On inspection he was surprised to find that he had discharged a mass having quite the form and character of the intestines. He immediately sent in a fright for his medical adviser Heurnius, declaring himself a dead man, as he had passed the whole of his bowels. Heurnius, however, on inspecting the dejection, congratulated him on having got rid of the cause of his complaint. For it was, says his biographer, a slow and viscid pituita, which, in consequence of his sedentary life, had collected by degrees in the whole intestinal tube, and had assumed its form. After the discharge of this substance, Lipsius recovered, and he ultimately regained his usual health.

CASE 5. An ambassador of the Emperor Charles V. was affected with severe pain, and with a tumour stretching from the right hypochondrium, through the pit of the stomach, to the left hypochondrium. Every kind of remedy having been administered for a period of six years, with a view of softening the induration, at length, after the injection of a somewhat acrid glyster, a hard and firm body, tubular, and about a foot in length, was passed, which he feared to be a portion of intestine. But as he seemed suddenly relieved, two other clysters were administered, and a similar substance having been again brought away, he was immediately restored to his former state of health.

CASE 6. A woman, aged 60, who had, for the space of five years, suffered from colicky pains, flatulent spasms, and constipation, felt from the fundament repeatedly, when at stool, some thickish substance projecting. Suspecting this to be a prolapsus ani, she several times replaced it, and in consequence of the difficulty of procuring an evacuation, she had thrice a clyster administered. By means of these, the preternatural membranous substance came more distinctly into view, and was at last discharged. On being examined, it was found to be a sheath, filled with excrement, resembling very much the colon, and, when it was cleaned of the feces it contained, and blown up, it was found to be 48 Parisian inches in length. The patient was relieved from the griping pains which she had previously suffered. On examining this membranous substance with the microscope, sometimes in a dry state, and sometimes softened with water, it was found, that though it resembled in figure the colon with its valvulæ conniventes, no blood-vessel or traces of fibres could be detected in it; it seemed to be nothing but a simple layer of a very thin and homogeneous substance, very like that which is produced by dissolved isinglass, spread upon polished marble or a plate of glass, and dried.

CASE 7. A man who had suffered long and severely, first

from griping pains, and afterwards from dysentery, was seized by a still more severe pain, with frequent desire to go to stool, but attended with a great degree of costiveness. He felt that there was something in the anus, which, notwithstanding his efforts to expel it, remained impacted in the passage, and prevented the feces from being discharged. He consulted a surgeon, who, on inspection of the affected part, declared it to be a case of prolapsus ani, and recommended, that in the first place, fomentations should be employed, and then the piece of gut should be returned, and that great care should be taken to prevent its falling out again. These measures produced no effect; there was no remission of the tenesmus or pain; and after suffering for a number of days, the patient himself, laying hold of the substance which was protruding from his anus, drew it out, with some difficulty, but without any pain. The substance was not unlike the fungous flesh of ulcers; it was more than a span in length; hollow, and open at the one extremity, but shut at the other. In its cavity, besides some blackish and dry feces, there were contained some calculi, not very numerous, resembling grains of wheat in size, figure, and colour. After the extraction of this substance, the patient, though not completely well, was better, for the tenesmus began to abate, the belly to be open, and the pains were diminished in severity.

CASE 8. A man affected with intestinal inflammation and cystitis, passed by stool so large a portion of false membrane, that he was alarmed by it, believing that he was passing his bowels. This patient passed at the same time in his urine, with severe pain, thick mucus mixed with portions of membranous conerctions.

The next three cases have usually been regarded as examples of the separation and discharge of portions of the lining membrane of the bowels.

CASE 9. A man having suffered severely from sharp gripings in the bowels, passed, within eight days, the whole of the inner coat of the rectum. This was not expelled at once, because it adhered firmly to the fundament and could not be easily separated from it. The patient completely recovered.

CASE 10. A Jew merchant 45 years of age, on the decline of a malignant fever, had been attacked with a very troublesome pain at the rectum, attended by a sense of weight and obstruction. At length, along with a discharge of blood, a thickish kind of membrane as it seemed, began to protrude from the anus. When Morgagni saw this substance hanging from that situation, it was about six fingers-breadth in length, and exceeded an inch in width; its colour was cineritious, degenerating into livid, like that of membranes which are affected with gangrene, yet it did

not fall off, being continued within the intestine, and so far as the surgeon could ascertain, by examining very gently, connected to it. From the time of its exit, the pain became less severe, but blood continued to issue forth occasionally.

On the following days the membrane came away, being rather ruptured by the constriction of the sphincter, as it seemed, than of its whole length; blood and an ill-conditioned ichor again issued out, and an alarming hiccough came on. A great quantity of pus was subsequently discharged, but Morgagni saw the patient out of bed in about five weeks, manifestly recovering his strength, colour, and habit of body, and retaining not only his feces, but also healing injections which were administered. There was some pain, indeed, even then, but it was evidently slighter, nor was it any longer very troublesome in its original situation. This patient recovered, and was alive and in good health after an interval of eighteen years.

CASE 11. A man, aged 49, who had been long engaged in military service, was observed to be gradually losing his healthy appearance. At length he was attacked with the usual premonitory symptoms of acute continued fever; he complained of very sharp pains shooting frequently through his right axilla, and causing his body to rise as if in an epileptic attack. His bowels were repeatedly moved, and he appeared better the following morning; but though he breathed well, did not complain of pain either in the belly or in the chest, and was not troubled with cough, he began, after a slight hawking, to spit a viscid mucus tinged with blood, without any great degree of exertion and without any cough, as if it rose spontaneously into the mouth. This viscid mucus tinged with blood became at last mixed with pus, the cough became frequent and urgent, and on the morning of the 6th day a portion of membrane was discharged with the sputum, which swam in water. The bowels having been constipated for three days, and the patient feeling a degree of tension in the abdomen, an emollient clyster was administered, which produced a stool containing a quantity of pus and blood, or matter similar to that which had been discharged from the mouth. Soon after this, gripings came on, and another motion of the bowels took place. On examination, there were found among the excrements, substances of an exactly tubular form, that seemed to be entire intestinal coats. They were torn at each end, sprinkled over with pus and blood, and in some places marked with reddish specks as if made with a needle. They were of different lengths; one portion being about a span. On more accurate inspection, says the author, it appeared that they were portions of the interior glandular membrane commonly called the *Peristroma Villosum*, for those rugæ and folds which are

observable in the internal membrane of the alimentary canal could be very distinctly seen in them. The bowels were twice moved in the course of the night; the stools contained bloody and purulent matter, but no membranous substance; the pus and blood continued to be discharged for only two or three days longer, and the patient gradually recovered, so as to be only nineteen days in all under treatment.

In annexing the following case to this series, I confess I feel great difficulty in forming a conclusion as to the nature of the substances discharged.

CASE 12. A lady, aged 67, had been subject for many years to constipation, to such a degree as to be sometimes ten days without a stool. When she had a call, it required painful exertions, and the consequence was the production of a prolapsus of the rectum to the extent of an inch. One evening, (19th Oct. 1806.) she felt some uneasiness and slight colic, which announced a stool. In the consequent efforts, vomiting came on, and the patient brought up a chamber-pot-full or more of fluid and bright red blood. After some indurated feculent matters had been discharged by stool, the blood came that way also, and the two kinds of discharge recurred several times during the night, always preceded and followed by acute gripings. When seen next morning her face was pale and sunk, the skin dry, and of a burning heat; the pulse contracted, frequent and unequal; the mouth dry; the tongue red; sharp pains were felt over the whole of the abdomen, and more particularly on the left side. Twelve stools and four vomitings occurred in the course of 24 hours. The blood was fluid and red, intermediate between venous and arterial.

The next day, all the symptoms had increased; they were accompanied with an extraordinary degree of meteorismus and of sensibility of the abdomen, and on the day following with frequent and painful hiccough. In consequence of the extension of the general inflammation of the intestinal tube to the œsophagus and throat, deglutition became difficult. A slight degree of smell now became perceptible in the stools, and some particles of purulent matter. On the 4th day, the symptoms were increased in severity; only one vomiting and eight stools occurred, which were rather brown than red; they were mixed with some flocculi of fecal matters and deposited at the bottom of the vessel a grayish pus. From this time a gradual improvement took place, so that between the 8th and 12th day, she was able to rise and walk about her room, though always bent, the pain in the abdomen not allowing her to straighten herself. She had from six to seven stools every 24 hours, which contained a large quantity of purulent matter.

On the 15th day of the attack, after an ordinary stool, feeling that something remained in the passages, she drew out from them a ribbon-like substance, which on being washed appeared to be a portion of intestine, formed by the exfoliation of a portion of the colon, and of the whole rectum, to the length of about two feet. At a subsequent stool, another portion of the same length as the first was passed. The author thought he could distinguish in it the three internal coats of the colon, several of its pouches or cells, fatty pelatons, and the kind of raphe or longitudinal line that is found below, and in the direction of the mesocolon. This portion was followed by two others, each three or four inches in length, but so torn that it was impossible to recognize either the form, or the coats of the intestines. From this time the patient gradually recovered, regaining her appetite and strength. Her bowels continued open, calling her frequently two or three times a day to stool. Sometimes the stools were rather liquid, in which case she required to be on her guard, as she was not at all times able to retain her evacuations. She remained thinner, and drier than before her illness, though she had still her colour and natural gaiety. After the end of November, she did not experience any actual pains in the belly; her body regained its natural erectness; but the abdomen continued more sensible to the touch, and had, she said, a feeling of being less full than usual. She required to walk with caution, in order to avoid the disagreeable succussion which she experienced from the shock of a hard body or of a false step.

SERIES II.—CASE 13. A man, about 50, was rather severely affected with bilious fever, during the progress of which he suffered most excruciating griping pains. These symptoms, in a short time, diminished in severity, but the patient was suddenly attacked with jaundice. Being put on the use of a laxative medicine, he passed substances which he supposed to be entire portions of bowels, but when these were washed in water, and examined, they proved to be nothing but pellicles of concrete mucus that had assumed the figure of the containing bowel. A large quantity of mucus, in the form of tubes and pellicles, having been discharged in this way for several days, he at length recovered, and continued free from frequent attacks of indisposition with which he had been previously troubled.

CASE 14. A woman who had experienced various ailments in consequence of the use of a poor and unhealthful diet, suffered particularly from obstinate constipation of the bowels, which in no slight degree aggravated her other ailments. From the use of some pills, she had frequent purging, and, after this had terminated, she suffered, day and night, most excruciating gripings, with lancinating pains in the bowels, particularly about

the umbilical region, and a sense of heat and most intense burning. From the treatment pursued, partial relief only was obtained. After an interval of some weeks, she passed by stool, not without pain, some membranes variously convoluted, immersed, as it were, in a very tenacious gluc, and resembling partly intestines broken down into small fragments, and partly a thicker and more extended pellicle. Two portions of fibrous and thick pellicles examined by the narrator, were more than five inches in length, two inches in breadth, and of a blackish colour at their extremities. The woman seemed to improve from day to day, till the membranous dejections, having gradually diminished, and the griping and lancinating pains having ceased, she was restored to her former state of health,—and at the time of her case being published, she had not experienced any return of her illness.

CASE 15. A young woman, after suffering for eight days from diarrhœa, found something hanging down from the anus, which, as often as it was replaced with the fingers, always burst out again. It was half a span in length, not unlike a finger in thickness and roundness, but, in respect of dryness and hardness, resembled a stick, and was of a black-colour. At last, when it could not be replaced, it dropped suddenly into the close-stool. She then passed some dry membranous fragments of the breadth of a finger, but several fingers breadth in length, every second or third day, with pain in the back and belly, particularly about the hypogastrium and umbilicus, in which region she at the same time experienced a feeling of constriction. After some days, a fresh mass of the same substance appeared, and it was then that she was visited by the narrator. These membranes could not, he says, be considered as the internal coat of the intestines, since that membrane could scarcely have been discharged, without being preceded by a flow of blood or of pus, which was not observed in this case, and the membranes themselves were harder and firmer than to be taken for the inner coat of the intestines. The patient recovered.

CASE 16. A matron of rank, who had very frequently suffered from wandering gouty pains, and other similar symptoms, at last experienced frequent diarrhœa, in the course of which, besides fluid excrements, sometimes of a yellowish and sometimes of a greenish colour, and sometimes of a pale mucous appearance, she passed, at longer or shorter intervals, an enormous quantity of pellicles. Of the coming of these she was warned by the tensive pain, and the motion, as it were, of boiling water, under the left hypochondrium, which she experienced. Various opinions were formed respecting these pellicles, some believing them to be portions of tape-worm, though no

symptoms of tape-worm had occurred; others supposing them to be portions of the internal villous coat of the intestine, or vasculo-glandular tunic, separated by ulceration. But the narrator, having washed the pellicles well in water, and examined their form, concluded that they consisted of a viscid mucus which had coagulated over the valvulae conniventes of the ileum, and particularly in the colon, and had condensed into a species of membrane. After the use of purgatives and detergent clysters, the excretion of pellicles was gradually diminished, and at length entirely ceased.

CASE 17. A woman, in other respects healthy, but who had made but a bad recovery after child-bearing, became affected with feverish paroxysms, sometimes assuming a simple, and at other times a double tertian type, accompanied with obstinate cutaneous eruptions, and with difficulty of swallowing, which daily increased. At the end of four weeks, the patient, whose countenance had assumed a dark-yellow hue, complained of such severe pains in the fauces, that she had the greatest difficulty in swallowing fluids. But nothing unusual could be discovered either externally to, or within the fauces. The tongue was clean, but dry; there was want of taste and of appetite; the belly was bound, the pulse languid, but more frequent than usual. A clyster having been administered, a mucus resembling frogs spawn was passed, and in consequence of the internal use of tartar emetic, vomiting of black bile was excited. After much bile and mucus had been discharged by stool, the difficulty of swallowing gradually abated. The pains in the fauces, head, and joints, subsequently disappeared. But under an attack of fever, the difficulty of swallowing returned, though by the employment of clysters an incredible quantity of tenacious mucus was discharged, part of which was of a tubular form like intestines. In ten weeks after the commencement of the illness, the patient had regained tolerably good health.

CASE 18. An engraver who, besides leading a sedentary life, was immoderate in respect of diet, was attacked with most obstinate constipation, after having for several weeks suffered from pains in his feet, a sense of weight in all his limbs, diminished appetite and increased thirst. The constipation was accompanied with pains in the abdomen and back; and the belly, in which the pains were most severe, was swollen and tense, and could not bear the slightest touch. The tongue was dry, and yellowish towards the root; the pulse full, quickened, and harder than natural. The patient was perpetually harassed with thirst and vomiting, so as frequently to throw up his medicines and drink. Clysters and laxatives having been administered, along with fomentations, the pains and vomiting ceased,

but it was not till the tenth day that the bowels were moved. Eight days afterwards, the pains in the joints, gripings and constipation returned, and continued for five or six days. The clysters now brought away large portions of mucus, which were partly shining and glassy, partly resembled pipes, with parietes of the thickness of a straw—which persons unacquainted with the appearance, supposed to be portions of intestines,—and partly solid fleshy masses. By this discharge the patient was wonderfully improved in his health.

CASES 19 to 22. Dr Powell, after mentioning the symptoms which are supposed to characterize the passage of biliary concretions through the gall-ducts, observes, that “in many such cases, no gall-stones can be detected in the evacuations when submitted to examination, but instead of gall-stones, when the evacuations have been repeatedly washed, the residue has exhibited a large quantity of flakes, mostly torn into irregular shapes, and appearing to have formed parts of an extensive adventitious membrane of no great tenacity or firmness.”

“In the first of the cases which came under my notice,” says Dr Powell, “this membrane was passed in perfect tubes, some of them full half a yard in length, and certainly sufficient in quantity to have lined the whole intestinal canal. In the other cases also, the aggregate quantity has been very large, and it has continued to come away for many days, but it has been in irregular thin flakes of not more than two inches in extent, and not, as far as I could discover, of the perfect tubular form, which would probably also have been broken down by the agitation in water, if it had existed in its first passage out of the body.”

“I have definitely examined,” continues this author, “four such cases, in all of whom the leading symptoms have been similar, and have led me to suspect the passage of biliary concretions at the time. They have all been adult females, and have occurred in private practice. I had attended but one of them previously to this attack, and she had frequently suffered from occasional pain in the intestines, and derangement of her powers of digestion, with flatulence, and a sense of suffocation. A similar history of liability to frequent recurrence of pain, accompanied by indigestion, was related to me in the other instances.”

“The more violent seizures under which I saw all the patients, consisted in a sudden and excessive pain in the epigastric region, increasing in paroxysms very frequently, rather relieved by pressure of the patient herself at the time, but leaving great soreness and tenderness during the intervals. This state continued under four days; during it the stomach was very irritable, and the tongue coated and clammy. Jaundice came on

at an early period, and the stools were white, brown, or somewhat greenish, and streaked in colours, until the films began to pass, when they were mixed with a full sufficiency of bile, but not at first of a healthy colour. The pulse throughout was calm, moderate and natural, in none of the instances amounting to 90. It of course did not indicate the existence of any inflammatory action, and still less was it disposed to assume that peculiar irritative quickness which marks enteritis. In one case, I noticed a very considerable hardness and contraction of the abdominal muscles, and in another, there was superadded to the above symptoms, a difficulty in passing the urine, with pain in the region of the bladder; and here the use of the catheter became necessary. Under the steady use of a mixture of the compound infusion of gentian, and infusion of senna, with the addition of liquor potassæ, repeated so as to produce four or more stools in the twenty-four hours, the flakes first separated and continued to do so in great abundance; the jaundice disappeared, and the patients recovered health and strength.

“I missed the opportunities,” Dr Powell adds, “of examining the qualities of the flakes thus evacuated, but a quantity of them was put into spirit of wine for preservation, and was contracted by its action, so as to look almost fibrous rather than membranous, as at first, by which one is led to suppose that they may consist of albumen, though this is only a supposition. It is very different from that effusion which often coats the serous membranes of circumscribed cavities, which remains attached to the part from which it is effused, permanently agglutinate neighbouring surfaces, and becomes an organized substance.”

CASE 23. An officer, aged 45, had from his boyhood, frequently suffered from epistaxis. From his 15th year he had been subject to hæmorrhoids, at first open, afterwards blind, with constipation, flatulence, congestions, palpitation of the heart, and other hypochondriacal ailments, and not unfrequently with tertian and quartan fever. The hypochondriacal affections afterwards increased, accompanied with spasms and pains which forced him to cry out. He had frequent attacks of hæmoptysis, a sense of weight in his chest, feverish paroxysms, and convulsive cough. After the long-continued use of clysters, an immense quantity of mucous and atrabiliar matter was passed daily by stool. At the same time salivation came on spontaneously. This was succeeded by inflammation of the lungs terminating in miliary fever. The clysters being continued, he frequently passed a quantity of matter, amounting to several pounds, partly consisting of black and fetid blood, partly of mucus with firmer masses of about the size of an egg. At last polypous mat-

ters were discharged, some of which, resembling blood-vessels in appearance, were about a foot and a half in length. So great was their resemblance to blood-vessels, that some young physicians actually mistook them for these. This evacuation continued to take place daily for nearly two weeks, the patient in the mean time daily recovering health.

CASE 24. A man of very active habits, but who had previously suffered from several very serious ailments, particularly inflammation and suppuration of the kidneys, and pains in the joints and in the head, complained, when seen, of an uneasy feeling in the abdomen, involving the hypochondria and loins, and extending to the region of the umbilicus, of a bitter taste, loss of appetite, habitual costiveness, and constipation of several days continuance, the pulse being full and strong. No great change seems to have taken place in the patient's condition till the sixth day, when after the introduction of a hot clyster he experienced a pretty sharp pain in the region of the umbilicus, and in consequence of an emetic which he took, he vomited a large quantity of acrid bile. On the eighth day he seems to have experienced something like an apoplectic attack, which, however, soon passed off: on the ninth he discharged a quantity of pure blood, and it was subsequent to this that he, on repeated occasions, discharged a quantity of membranous, fibrous, or cartilaginous concretions, with more or less blood. This discharge is last mentioned as having occurred on the twenty-third day of the disease; subsequently to this he seems gradually to have improved, and to have ultimately been restored to perfect health.

CASE 25. "A lady of delicate habit, 28 years of age, has been long labouring under a peculiar irritability of the rectum, giving rise to some degree of chronic inflammation, and a forcible contraction of the sphincters on evacuation. She has already discharged this kind of effusion for six weeks, and in tubes so perfect, as at first to have excited no small alarm in the attendants who noticed it. It is now in some degree on the decline, both in quantity and tenacity."

CASE 26. A woman about 30 years of age, unmarried, corpulent, and of robust stature, complained for a length of time of uneasiness in the abdomen. The only other marks of indisposition seem to have been, that the tongue was covered with a dirty-white crust. She had at all times an unpleasant taste and a variable appetite. The alvine dejections were natural, but evacuations administered either above or below, brought away an incredible quantity of mucus. When she took food, the first mouthfuls were swallowed with great difficulty; solids passed however more easily than liquids. By continuing to eat she got rid of a sensation in the fauces, which was always pre-

sent when she did not eat, viz. a sensation as if some mucus or a worm was rising up. She likewise complained of pains at the place where the pharynx ceases and the œsophagus begins, though when the fauces were inspected no morbid appearance could be discovered. She always felt a sensation of emptiness in the stomach, which sometimes increased even to nausea, and she complained likewise of compression and tearing in the stomach, sides, and back, and of a weight in the umbilical region. These uneasy feelings continued the same in every position, and during the night disturbed her sleep. In these circumstances she took it into her head that some little animal was concealed in her bowels, and frequently examined her alvine dejections, in which she found occasionally portions of albuminous matter, of a tubular form, and having a branch-like appearance. Dr Autenrieth has given a full description, as well as a delineation of several of these pellicular fragments. The only information given respecting the farther progress of this case, is the circumstance of the patient's having stated in a letter that she had happily got quite free of the suspicion of an animal dwelling in her bowels.

SERIES III.—CASE 27. A woman above 50 years of age, married, but never having had children, experienced very frequently symptoms that are usually referred to the uterus, and was subject, from time to time, to flatulent and gouty complaints, bilious colic, melancholy, and nephritis, on account of which she had repeatedly recourse to mineral and acid baths. About six years before the time of her being seen, she had had an attack of dysentery. The following is the general character of the attacks to which she was from time to time liable. She complained of continual lacerating pain, not however, at all times equally severe, stretching to the left side under the false ribs, sometimes to the groins, sometimes under the circumference of the stomach towards the right side. When this pain had lasted for some time, as for six weeks for example, she suffered most intense anguish in the præcordia, and alarming attacks of fainting, her whole appearance seeming to indicate instantaneous death. After this state had continued for a few days, membranes of different sizes, most of them small, were passed by stool, with or without blood, which when dried resembled skins from a sow's bladder shrivelled with heat. When this was over she recovered her ease, vigour, sleep, appetite, and returned to the usual exercise of her functions, experiencing no complaint except that the pain on the left side did not entirely disappear, though it became slighter than before. After some weeks, however, the attack recommenced, the membranes being at last discharged with the same deadly feeling of oppression.

CASE 28. "A young woman, who in her younger days was threatened much with a decay, and for a dozen of years was subject to slow remitting fevers, all along had the most delicate stomach one can imagine, nothing but repeated cautious trials by herself being able to determine what drink she could bear."—"Testaceous powders generally gave her relief under the ill fits, but the continued use contributed nothing to harden her stomach against new attacks, a cautious diet being the only thing under which she got respite, though often she had attacks when most careful this way. For the bygone year she has had frequent fits of the dysentery affecting the whole abdomen, though the tenesmus continued longest, and gave her the greatest uneasiness. Under the first fit, which was the severest, observing that the mucous stuff she passed in great quantities lay in parcels somewhat firm and coherent, she had the curiosity to reserve some of it for my examination. This I found of different forms; some parts of it one would have reckoned from colour, length, and shape, to have been a round human worm bruised, but laying it in water and spreading it, I found it altogether fibrous, or rather vascular, made up of larger vessels parallel one to another, as thick as a horse's hair, between two and two of which ran other vessels as big as a human hair, of a reticular disposition. Some lozenges were about the fourth of an inch in diameter, but others much larger, all of them were transparent, and knotty like lymphatics. In this form I spread parcels of it out, between two and three inches in breadth, and six or seven in length; in several of them both the larger and the smaller fibres appeared every way entire, though easily broken when handled; in other parcels the fibrous part was so dissolved, that they appeared one coagulated lump like the white of an egg, though even these, when carefully examined, observed more or less of the fibrous part. Several times since, in the different attacks of the disease, the same mucous stuff has been examined, and found always of a piece with what we have described."

CASE 29.—A lady between 30 and 40, suffered much from pain under the ribs of the right side, which was increased by pressure, and from headaches; attended by great dejection of spirits, drowsiness, and very obstinate costiveness. The complaint in her bowels, and the diseased secretion from the surface of some part of the intestinal canal, seemed to originate from a strong purgative medicine which was given to allay a febrile attack with which she was seized after lying-in; it succeeded in removing the fever, but with it her milk also, of which she previously had a great quantity. Her bowels were then attacked, and for three or four years, at the interval of two or three weeks (sometimes more frequently,) she passed by stool, after consider-

able griping, pain, and straining, attended by a sense of weight and pressure in the rectum, a kind of whitish very viscid jelly, mixed with shreds of coagulable lymph, and in such quantity as nearly to fill the half of a common sized chamber-pot. After the evacuation, which only could be produced by the aid of considerable doses of castor oil, she felt much relieved. In the course of eight or ten days, she was generally again seized by pain in her bowels, which was succeeded by very violent headach, often by nausea and vomiting. In consequence of these very severe attacks she had suffered very much in her health, having frequent cold fits, similar to the attacks of an ague, terminating in a hot fit and perspiration, but without much alteration in the pulse, or other febrile symptoms. Her body was always costive. There was nothing peculiar in the feculent matter, except the jelly above-mentioned.

CASE 30. A woman of rank, 44 years of age, who had borne seven children, and had two abortions, laboured under great weakness of nerves, in consequence of frequent nursing, of repeated hemorrhage, of being affected with fluor albus, and of repeated attacks of dysentery. After having suffered from vertigo, dimness of sight, torpor of the limbs, pains in the head, and irritation of mind, she was seized one day about noon, with confusion of thought, difficulty of speech, and a certain degree of weakness in the right arm. There was much borborygmus; her urine was as clear as water; and subsequently her mouth was often twisted. Some time afterwards she was seized during the night with spasmodic shivering, which was followed by complete paralysis of the arm and foot. These parts, however, recovered after some time their power of motion.

On clysters being administered, the dejections procured were very pituitous, and the patient at length passed a ball of pituita which, after it was unrolled, presented the appearance of a long pipe more than a cubit in length. This pipe, after being macerated for three days in hot and cold fluids, both pure, and saturated with salts, retained its membranous figure. Large portions of pituita also were afterwards passed for some time, particularly oblong portions of about the thickness of the finger, covered over with a membranous pituita, and marked on the surface with furrows as if they had been forced through an aperture. Still the disease continued more or less.

CASE 31. "A lady, aged 18, had suffered for a year or more from a disordered state of the bowels, accompanied by a most remarkable and unmanageable degree of tympanitic distention. When I saw her, along with Dr Combe, in the summer of 1826, she was affected with a variety of hysterical symptoms, with much weakness, impaired appetite, and a very disordered state of the bowels. Under a course of mild laxatives, combined with

tonics, these symptoms gradually subsided; and when she returned to the country in August, she was in very good health, except that the bowels required the frequent use of medicine, and that she occasionally complained of headach, and of a feeling of heat in the epigastric region. In November the bowels again became more obstinate, and she was considerably annoyed with acidity. In the beginning of December, her throat was covered with aphthæ, and she brought up from it considerable quantities of thick white matter; and about the same time, the evacuations from the bowels began to contain much viscid mucus, and afterwards portions of a white substance. She now had thirst, was feverish in the evenings, and complained of pain in the right side of the abdomen, in the seat of the ascending colon. The pulse through the day was generally from 74 to 80. The aphthous state of the throat disappeared in the course of December, and afterwards the tongue was only occasionally observed to be red and tender, but the other symptoms continued to recur from this time, with numerous variations, for six or seven months, during the greater part of which period she was entirely confined to bed, and reduced to a state of the greatest weakness. The prominent symptom now was, frequent discharge from the bowels of immense quantities of a substance, which sometimes appeared in the form of pure transparent jelly; at other times of a long fibrous stringy matter, and frequently of large pieces of firm, uniform, tenacious membrane. These last were occasionally in flat portions several inches in length, and frequently formed distinct tubes; sometimes they were in masses resembling hydatids, and sometimes in membranous bags which enclosed healthy feces. The membranous crusts or tubes now mentioned, were frequently four or five inches in extent, and sometimes portions of white matter resembling cream were observed in the evacuations. The discharges of these various matters frequently ceased for several days together, the motions then becoming quite natural. The reappearance of the morbid discharges was generally preceded by a feeling of constipation, and a sense of heat along the intestinal canal, with a sensation of craving at the stomach, thirst and headach. The pulse generally continued from 70 to 80. The feculent matter which came off mixed with the morbid discharges, was of a natural appearance, but hard and lumpy. Her appetite was generally variable, and her digestion bad. Towards the end of April 1827, the symptoms began to subside, so that she was able to be out of bed daily for some hours. During May and June, the mucous and membranous discharges continued to recur occasionally, but in small quantities, and with longer intervals, and in July they entirely ceased. The bowels from this time continued natural, or were easily regulated by very mild medicines, and the

evacuations were quite healthy. But from the middle of June, when the more decided improvement took place in the state of her bowels, she began to have a slight cough, and in July she was again confined to bed. In the beginning of August she was brought to town, when the prominent symptom was a distinct paroxysm of fever which attacked her daily, beginning sometimes betwixt 12 and 2 o'clock, and continuing till evening. There was not much emaciation, but a pale unhealthy aspect; there was slight cough without expectoration, and occasional uneasiness in the left side of the thorax, where the respiration was very imperfect. The febrile paroxysms continued to increase in severity, with rapid failure of strength. In the beginning of September she began suddenly to expectorate large quantities of matter, which had a decidedly tubercular character; and she died on the ninth.

Inspection.—"The left lung was a mass of disease." "The viscera of the abdomen presented no appearance of disease, except the mucous membrane of the colon. Through its whole extent, it was thickly covered with small spots of a clear white colour, which were remarkably distinguished by their colour from the mucous membrane surrounding them. Few of them were larger than the diameter of large pin heads, and on minute examination, they were distinctly ascertained to be vesicles, very little elevated, but when punctured, discharged a small quantity of clear fluid: the whole surface of the membrane presenting a very peculiar appearance, from the immense number of spots with which it was covered; but the other coats were entirely healthy. In the mucous membrane of the caput coli, there were two distinct spots in a state of ulceration. The small intestine was healthy."

CASE 32. In the spring of 1817, abdominal inflammation was very prevalent in Paris. It frequently terminated by the eruption of furunculi on the belly, and by the excretion (by vomiting and by stool,) of pseudo-membranous layers. A considerable number of persons affected in this manner, were treated in the clinical wards of the Hotel Dieu. In most of them, the inflammation first attacked the stomach and small intestine, and afterwards descended into the large intestines; this progress was particularly remarkable towards the termination of the epidemic. In examining the body of a young man, aged 20, who had died on the eighth day of a severe gastro-enteritis, the stomach was found lined with a false membrane throughout the whole of its pyloric half. The villous coat was uniformly erythematous. On its surface there existed two brownish-red zones, unequal in length and extent, which followed the longitudinal direction of the organ. These bands were also covered by the false membrane, but this inflammatory concretion was softer and

less adherent over them, than over the other parts of the villous coat of the stomach, though, indeed, it was everywhere easily detached. The muciparous membrane was very obviously thickened, and easily torn off in shreds.

CASE 33. A woman 26 years of age, entered the Hotel Dieu, on account of an intermitting fever, and was brought to bed there without any untoward occurrence. Ten days afterwards she was seized with dysentery, not very severe. This disease seemed to be advancing towards a favourable termination, but on the tenth day the symptoms increased in severity, and continued till the death of the patient, which happened on the 34th day.

On dissection, the colon throughout its whole extent, and a part of the rectum, were found lined by a false membrane, under which the villous coat was red and slightly thickened. At some points on its surface there existed violet spots resembling ecchymoses, formed under the internal membrane of the intestine, but they were in fact produced by a kind of combination or infiltration of blood with the texture of the villous membrane. The pseudo-membrane was very adherent at some points; at others it was detached, and of a softer and less resistant texture than at the parts where it was adherent; at some places it was separated from the internal membrane, by a layer of puriform mucus. There were pretty extensive points at which false membrane did not appear to have existed; in other places it was perforated, and as it were worn away, for its borders were thinned, so that the colour of the subjacent membrane could be perceived through it.

CASE 34. A woman, aged 53, having swallowed by mistake about a spoonful of nitric acid, immediately rejected the greater part of it. The effects, however, were so severe, that after about twenty days, she discharged by stool, after many efforts, a long membranous packet consisting of a single piece, singularly folded and rolled up on itself. This body having been well washed, extended, and examined, presented the form of the œsophagus and stomach in all their dimensions. It was obviously the internal membrane of these organs, which had been raised and detached throughout its whole extent at once. On the slightest inspection its texture was recognizable, the change it had undergone being pretty nearly equal throughout. It was from one to two lines in thickness, and of a well-marked brown colour. The portions corresponding to the large and small extremities of the stomach were thinned, and pierced with several holes. The woman having died two months after this occurrence, the body was opened. The internal surface of the œsophagus and stomach was very smooth and polished, spotted and shaded with red of more or less brightness, and had altogether an unusual appearance.

Though the following case differs from those already detailed in the direction in which the membranous discharge took place, it has sufficient analogy with them to justify its introduction here.

CASE 35. A man, aged 50, of a feeble constitution, and addicted from his youth to the excessive use of wine, experienced, at the age of 42 years, an attack of Painters' colic, so severe as to deprive him, for some hours, of sensation and consciousness. This recurred for several years at different intervals.

When visited, he was found seated in bed, with his head resting on his shoulder, this being the only position he could support; his face was pale, and covered with a clammy sweat, and his tongue as if it had been cankered by a liquid caustic; he was coughing frequently, though with difficulty and pain, and breathing very laboriously. He complained of a dull pain under the xiphoid cartilage, and of an acute pain at the lower border of the false ribs, upon the left side. His pulse was small, contracted, and frequent, and he had frequent hiccough and vomiting of mucous matters. The whole of the symptoms, and particularly the state of the tongue and of the throat, led the physician to suspect that this person had taken some violent poison; but he obtained satisfactory assurances that this was not the case. The patient had been suffering for eight days from a severe cold, which had obliged him to keep the house.

During the first five or six days after he was seen, the pain continued, though less severe, with nausea and pretty frequent vomiting; on the evening of the 7th day, he had violent cough with threatening of suffocation; he vomited a quantity of very fetid pus, and passed a similar matter by stool. The purulent discharge continued the next day, amounting to about a pound, and for seven days after this he seemed to be gradually recovering. On the 15th day he experienced a sensation of a burning heat extending from the pharynx to the stomach; the same evening he suffered severe pain in the epigastrium, with hiccough and nausea; and he vomited, along with a large quantity of blood, a membrane resembling a portion of a sac, of from four to five inches in length. The following morning he had a similar attack, and vomited a membranous sac representing three-fourths of the stomach, which would have been completed by the first membrane, if it had been preserved.

On examination of this sac, it was found to be seven inches in length; longitudinal and circular fibres were seen in it, which were covered more or less by a dense cellular texture; the mucous membrane was recognised over the whole of its internal surface. The upper border represented the small curvature of the stomach, and in it traces of the coronary vessels were found; the lower border resembled in every respect the large curvature

of the stomach. At the right extremity there was an aperture about half an inch in diameter; the left extremity was very large in consequence of its wanting about a third of the pouch; the borders were thin and fringed. There were several holes around this, the inner surface was generally of a deep red-colour, and spots of gangrene were scattered over it; the part corresponding to the pylorus and commencement of the duodenum was tinged with bile.

The patient seemed gradually to improve for nine days after the discharge of the second membrane; but on the tenth day he died, without exhibiting any symptoms besides those of great debility.

On examination of the body after death, the Stomach was found occupying somewhat of a perpendicular direction, and a little distended. Being opened throughout its whole length on its anterior surface, and the incision extended some inches into the duodenum, it was found filled with coagula of black blood, the large *cul de sac* was of a red-colour, and its parietes were thinner than natural.

The red-colour and thinning of the parietes were remarked here and there throughout the rest of the viscus, but it was not ulcerated, and contained only a very small quantity of pus, some spoonfuls of which could be pressed from the spleen into the stomach. The peritoneal membrane did not appear affected, proving that some exterior portions of the sac which had been taken for portions of peritoneum were only a denser cellular texture. Fleshy fibres were everywhere observable, but they appeared less numerous in the large *cul de sac* opposite the spleen. A probe introduced into the aperture by which the pus reached the stomach, penetrated into a membranous sac which surrounded the spleen. An incision made into this sac brought into view the spleen floating in pus, altered in its size, as well as in its substance, and breaking down in water like pulp.

On comparing this stomach with a healthy one, it was observed, 1st, that the colour was not the same. 2^d, That the mucous membrane which forms many rugæ in a stomach which is not diseased was entirely wanting in this one. 3^d, That the thickness of the parietes was evidently less in this stomach than in that with which it was compared.

Such are the cases of Pseudo-membranous alvine discharge which I have been able to find upon record. I should next proceed to detail some of those which have fallen within my own observation, or been communicated to me by others, and to deduce the general conclusions to which they seem to lead. These purposes, however, I must defer to another occasion. In the meantime, it may tend to throw light on the morbid con-

ditions of the mucous membrane of the alimentary canal, on which this form of discharge depends, if we take a slight survey of the observations of those who, in *post mortem* examinations, have found this membrane more or less extensively covered with albuminous exudation, without its having been observed during life that pellicular substances were contained in the alvine evacuations.

Dr Monro, in his valuable work on the Morbid Anatomy of the Gullet, &c. has very correctly described the appearances which albuminous exudation exhibits in this situation. "When the villous coat of the alimentary canal," says he, "is the seat of inflammation, the diameter of the part which is inflamed is sometimes much diminished by the effusion of coagulable lymph upon its villous coat. The quantity of coagulable lymph effused is very various; sometimes it is as thin as a wafer; on other occasions, in such quantities as to fill the greater part of the affected bowel. In some cases, it forms only a thin lining to the villous coat, or appears in the form of tattered shreds; in other cases, it fills up the spaces between the valvulae conniventes; in others, covers these, and sometimes it takes the form of small tubercles, of a conical figure, which have been minutely described by Dr Donald Monro, by Sir John Pringle, and Sir George Baker, as having been found in the bodies of persons who have died from dysentery." Dr Monro mentions, that he has also seen a number of small cylindrical bodies projecting from the villous coat of the intestines, and which seemed to be chiefly composed of masses of coagulable lymph.

I have already had occasion to allude to the occurrence of albuminous exudation in Aphthous inflammation. In this affection, the exudatory inflammation seldom extends lower down in the alimentary canal than the œsophagus. This fact was particularly noticed by Dr Baillie, who remarks, that "the œsophagus is frequently lined with a layer of coagulable lymph, which is continued from the cavity of the mouth. This, it is said, sometimes extends over the whole intestinal canal; but I believe this appearance to be extremely rare, and it commonly terminates at the lower end of the œsophagus. The mucuous membrane of the mouth is, at the same time, much more vascular than in its natural state, shewing a deep red colour; but in examinations after death the appearance of greater redness is sometimes scarcely observable in the œsophagus. This disease is known under the name of aphthæ, and is much more often to be observed in the living than in the dead body." *

* Morbid Anatomy, edited by Wardrop, p. 90. M. Cruveilhier, in reference to this passage, states, that he finds in M. Dupuytren's notes a very remarkable ex-

The general accuracy of Dr Baillie's statements, respecting the morbid appearances found in cases of aphthous affection, seems to be fully confirmed by those who have more recently investigated the subject. In M. Bretonneau's *Traité de la Diphtherite*, I do not find any reference to the occurrence of a membranous concretion lower down in the alimentary canal than the pharynx, except in the cases of two young children in whom a thick consistent membranous tube, ensheathed in the œsophagus, was traced as far as the cardia. P. 34. § 35.

M. Lelut has seen the exudation, however, on the inner surface of the stomach. "The Muguet," says that author, (Breschet's *Repertoire*, iii. 81,) "considered in its material nature only, is a false membrane, which in new-born children is seated on the mucous membrane of the supra-diaphragmatic portion of the alimentary canal, and on the mucous membrane of the stomach, and which I have never seen extend beyond the stomach into the rest of the alimentary tube."—"During life and after death, the false membrane in which the muguet consists may be seen above or below the epithelium; but hitherto its primary seat has not been incontestibly ascertained." M. Lelut mentions, that he has never found the slightest trace of the matter of muguet in the alvine evacuations, from which he infers that this matter is not formed below the stomach.

M. Billard, in his *Traité des Maladies des Enfants*, p. 315, remarks, that the change in the secretion of the mucous membrane in which muguet consists, occurs much less frequently in the stomach than in the œsophagus and mouth; for of 240 cases of this disease observed during the year 1826, in the "Enfans Trouvés" hospital at Paris, he saw the stomach affected with the exudation only three times, and the intestinal tube only twice. In one of these two last mentioned cases, the surface of the *ileum* was the seat of affection; in the other, the cœcum and colon.* P. 382-3.

Dr Abercrombie has given a very interesting account of a case of aphthous affection in an adult, which proved fatal, and in which the pseudo-membranous exudation extended to the cardia.

"A gentleman, aged 26, came to town in June 1826, to consult me about complaints in his head. On his journey he

ample of inflammation of the œsophagus, terminating by the formation of a thick false membrane which lined this membranous and muscular canal throughout its whole extent. *Essai sur l'Anatomie Pathologique*, 1816, l. 146.

* Similar statements upon this subject, are to be found in the *Recherches Pathologiques sur plusieurs maladies des enfans nouveau-nés*, par P. S. Denis, Commercé, 1826, p. 510. See, however, in the *Archives Generales de Médecine*, 1829, xx. 580, a case of pseudo-membranous concretion, resembling muguet, found in the ileum and large intestine of a new-born child, by M. Guyot.

thought he caught cold in crossing the Firth of Forth, and when I saw him, he complained of his throat, and there was a glandular swelling on the right side of his neck. His voice was hoarse, with a peculiar husky sound. The fauces were of a bright red colour, without much swelling, but were covered in several places with aphthous crusts. He was at this time not confined, and there was no fever; but, after a few days, he became feverish, the other symptoms continuing as before. He was now confined to bed and actively treated, and after eight or nine days he was much better, so as to be able to be out of bed; but there was still some rawness of the throat, with small aphthous crusts, and a husky sound of the voice. After a few days there was a recurrence of fever, which now assumed a typhoid type, with considerable appearance of exhaustion. He had some dyspnoea, with considerable difficulty of swallowing. The attempts to swallow excited sometimes cough, and sometimes vomiting; and by both he brought up considerable quantities of a soft membranous substance. He became more and more exhausted, without any remarkable change in the symptoms, and died at the end of about three weeks from the first appearance of the disease. For twelve hours or more before his death, he swallowed pretty freely.

Inspection.—The whole of the pharynx was covered by a loose soft adventitious membrane, which also extended over the epiglottis, and portions of it were found lying in small irregular masses within the larynx, at the upper part. A similar membrane was traced through the whole extent of the inner surface of the œsophagus, quite to the cardia. Near the cardia, it lay slightly attached, forming a soft continuous mass about a third of an inch in diameter, and with the œsophagus closely contracted round it. The other parts were healthy."

M. Andral mentions,* that he had found the whole internal surface of the pyloric portion of the stomach lined by a grayish tenacious layer, coming away in shreds, simply laid upon the mucous coat, which it at least equalled in thickness. In a young girl twelve years of age, whose stomach, on its internal surface, presented a great number of red patches, extending in the form of large bands, from the cardia to the pylorus, "we found," says he, "each of these patches covered by a membranous grayish curd like layer. In the intervals between them, the internal surface of the stomach was very white, and was not covered by any false membrane." In this case the whole air-passages were lined with false membrane, and the pharynx and œsophagus were affected as well as the stomach.

* Clinique Med. Fievres, p. 372; and *Precis d'Anat. Patholog.* ii. 161.

The inflammatory action which gives rise to pseudo-membranous exudation on the internal surface of the alimentary canal, may be occasioned by irritating substances that have been swallowed. "The effect of corrosive liquids on the œsophagus," says Mr Mayo, * "is to produce, in the lowest degree, separation of the cuticle; in a higher degree, effusion of lymph; in the highest, sloughing of the lining membrane to a greater or less extent; which being thrown off leaves a granulating surface, that cicatrizing contracts and narrows the canal, establishing permanent and fatal constriction."† Dr Baillie mentions, that in cases of poisoning by arsenic, he has seen a thin layer of coagulable lymph thrown out upon the inner surface of the stomach. In Dr Roupell's *Illustrations of the Effects of Poisons*, the first plate represents the stomach, &c. of a dog poisoned by a drachm of arsenic; the internal surface of the stomach is of a deep crimson colour, except in some spots which are covered with portions of yellow matter. These are said to be the arsenious acid itself enveloped in mucus, and adhering to rugæ, but easily detached by the scalpel. Is this the substance which Dr Baillie regarded as a layer of coagulable lymph, or, if different, by what marks are these two kinds of substance to be distinguished from each other?

Mr Howship mentions, that in examining the body of a child four years old, who had died twenty-six hours after drinking boiling water out of the spout of a tea-kettle, the following appearances presented themselves. The stomach externally had no appearance of inflammation; on the œsophagus and trachea, however, there was external redness. Internally the œsophagus was evidently somewhat inflamed, as was the mucous membrane lining the trachea, but in neither of these canals was there any distinct trace of effusion. Just within the cardiac orifice of the stomach, an effusion of coagulable matter, mediate in appearance between lymph and ropy mucus, had taken place, and that so decidedly as to give the idea of an additional membrane lining the cavity, and visibly terminating at the cardia. This appearance was lost towards the pylorus, by the effused matter insensibly assuming the mucous character. In a few points, the villous membrane presented small spots of capillary vascularity.

* *Outlines of Pathology*, p. 282.

† It were to be wished that in describing and delineating the effects which corrosives produce on the alimentary canal, pains were taken to distinguish between those that depend upon their chemical action and those that depend upon the inflammatory action which they occasion. The experiments made by M. Orfila, with a view of obtaining means of distinguishing whether a poison has been introduced into the alimentary canal during life or after death, would form a necessary introduction to an investigation of this kind. The difference in the appearance of the epithelium in cases of poisoning by nitric and by sulphuric acid, as represented by Dr Roupell in his 4th and 5th plates, is very striking.

The exudation of coagulable lymph on the mucous surface of the alimentary canal may occur, however, independently either of aphthous affection or of the action of corrosive substances.

Mr Howship, in speaking of inflammation of the stomach says, "Examined after death, the stomach exhibits the common effects of inflammation; a considerable redness of the internal or villous coat is the most frequent appearance, sometimes combined with effusion of albuminous matter into the cavity. * * * * Among many rare preparations in Dr Hooper's collection, are two specimens of particular interest. One of these is the section of a stomach, the coats of which are much thickened from a deposit of coagulable lymph. The patient was the subject of inflammatory fever; all at once the symptoms left him, upon the accession of acute gastritis, which in two days proved fatal. The other is the inverted stomach from a fine youth who died on the fifth day of acute gastritis. The internal surface is copiously fringed with effused coagulable lymph, here and there loosely suspended from the rugæ. I have in my own possession," continues Mr Howship, "the stomach of a child only two years old, who died from inflammation of the stomach, connected with hydrocephalus; the stomach is inverted, and the mucous membrane, finely injected, demonstrates to great advantage the effused and white coagulable matter hanging in fringes from every part of the injected surface."

Dr Godman of Philadelphia gives * the account of the dissection of a woman, aged apparently about 25 years, extremely emaciated, and presenting marks of extensive pulmonic disease, in whom the internal surface of the stomach was found lined with a thick investment of mucus, so tenacious and dense as to appear like an additional coat. In attempting the removal of this, the stomach was inverted, and washed, first in cold, and then in warm water, but ineffectually; it was then washed with soap and water without any notable quantity being separated, and finally, was rubbed between the hands as in washing clothes, by which means a few flakes were detached, but the greater part still remained adherent. The stomach contained a considerable quantity of ether mixed with other fluids.

Dr Baillie mentions his having seen, in violent inflammation of the intestines, scattered portions of coagulable lymph thrown out upon the surface of the mucous membrane; this, however, he says, is very uncommon.

In a case of *Enterite Couenneuse* communicated to the Anatomical Society of Paris by M. Pailloux, * the mucous membrane

* Philadelphia Medical Journal for May 1825, p. 93.

† Revue Medicale, 1830, ii. 397.

of the small intestine was covered with a pseudo-membranous layer extended uniformly over its surface. The follicles did not seem to have had any share in the production of this false membrane, which, it was remarked, perhaps differed only by its continuity and its thickness from the small isolated patches secreted in the muguet by the villi of the intestines.

Fernelius relates, that a patient suffering under a similar but more severe affection than the subject of Case 5, experienced complete obstruction of the bowels, and at length died, the belly having become greatly swelled. On dissection, it was found that the colon was so completely stuffed with concrete Puita as to seem quite solid, and to prevent entirely the passage of feces. *

In the catalogue of the preparations in the Anatomical Museum of Guy's Hospital, mention is made (No. 1857) of a portion of colon with a layer of adhesive matter forming an adventitious membrane on its inner surface, I am informed by Dr Hodgkin, that no particulars are known with respect to the case from which this specimen was obtained.

Dr Horner of Philadelphia, in his *Treatise on Pathological Anatomy*, p. 89, says, "In the case of an intus-susception of an infant, in the Anatomical Museum, there is a thin crust of lymph upon the mucous membrane of the gut; and in an erythematous colon from the Alms'-house, presented to me by Dr Hodge, where there had been an enormous distention with feces, he, and Mr Chew, resident pupil, were of opinion that there was a lining of coagulable lymph."

Dr Monro has delineated,† a portion of ileum contained within a herniary sac of a crural hernia, in which the cavity of the protruded portion of intestine was nearly filled by coagulable lymph, the obstruction being so complete at one part, that not even a small probe could be passed from the upper to the under part of the strangulated intestine.

The same author also mentions (p. 121.) his having seen in the collection of the late Mr A. Burns of Glasgow, a specimen taken from a child, where the same kind of gelatinous substance as that discharged by his patient, case 29, mixed with coagula-

* Dr Monro relates a case communicated to him by the late Dr Walter Graham, of Dalkeith, of a boy eleven years of age, on the examination of whose body after death, it was found that, "about an inch below the pylorus there was a small hole, out of which the feces, or rather the indigested aliment passed, and was discharged by the umbilicus. The remainder of the intestinal canal, not an inch of which could be traced below the opening, was converted into a hard fatty substance, which, along with the other parts, was much diseased, and adhering firmly to the omentum and peritoneum." Dr Monro seems to regard this as a case in which the intestinal canal was plugged up by coagulable lymph, but I confess there is nothing in the description of the appearances which would lead me to this conclusion.

† Observations on Crural Hernia, Tab. 5th, fig. 2d, and Morbid Anatomy of Gullet, &c. Plate xiv. fig. 2.

ble lymph, adhered very intimately to the villous coat of the sigmoid flexure of the colon and the rectum; and above the sigmoid flexure the intestine had given way, and the ruptured part was also covered by the same kind of jelly. In this case, the rectum was considerably constricted for the space of four inches.

M. Andral in his *Clinique Medicale* (Fievrès, p. 282,) gives an account of the dissection of a case of fever, in which the internal surface of the rectum was lined, throughout the greatest part of its extent, by a pultaceous grayish membranous matter, below which the mucous membrane was red and ulcerated at several points. In his *Precis d'Anatomie Pathologique*, this author alludes (ii. 161,) to his having twice found the internal surface of the rectum, and once that of a part of the colon, lined by a semi-concrete layer, resembling thick cream, in which no trace of organization could be discovered, and which could not be raised in a tubular form.

“In the small number of cases,” says M. Andral, “in which good observers have ascertained, either in the stomach or in the intestines, the existence of pseudo-membranes, they have given the following description of them. The pseudo-membranous patches which M. Billard found in the stomach of three children, one of them four, and the other two six days old, appeared to him to be formed by an agglomeration of small white points raised upon the villi of the membrane, and adhering firmly to them. Below these points the villi were very prominent, swelled, red, and bloody at their extremities. M. Lelut, in the cases which he had occasion to observe, was, like M. Billard, persuaded that the false membrane was arranged in points, sometimes conical and covering a large space, sometimes isolated from one another. In two of the cases related by M. Billard, and in those mentioned by Lelut, no follicles were observable in the stomach. In M. Billard's third case, there were found, along the small curvature, several swelled follicles surrounded by a red circle; but even in this latter case, it was not at the parts where the enlarged follicles existed, that the pseudo-membranes were found. It would appear, then, that the villi have much more to do with the production of these pseudo-membranes than the follicles. This, however, applies only to the subdiaphragmatic portion of the alimentary canal; for in the mouth and pharynx, as well as in the air-passages, the mucous membrane has no villi, and still pseudo-membranes are formed there, much more frequently than in the stomach.

“In the intestines, the pseudo-membranes presented themselves to M. Billard as a mass of small whitish flocculi, so adherent to the villi, that they could be removed only by being strongly scraped with the scalpel. Some of these flocculi, however, were found in the midst of the feces.”

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